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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,030	08/27/2003	Mitchell Paul Tasman	BBNT-P01-248	5116
28120	7590	10/11/2005	EXAMINER	
FISH & NEAVE IP GROUP ROPES & GRAY LLP ONE INTERNATIONAL PLACE BOSTON, MA 02110-2624			BOUTAH, ALINA A	
			ART UNIT	PAPER NUMBER
			2143	

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,030

Applicant(s)

TASMAN ET AL.

Examiner

Alina N. Boutah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/27/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,683,885 issued to Sugai et al. (hereinafter referred to as Sugai) in view of USPN 6,216,167 issued to Momirov.

Regarding claim 1, Sugai teaches method for transmitting data units from a node in a communications network, the node including one or more network interfaces, each of the one or more network interfaces being associated with at least one queue, the method comprising:

identifying one of the one or more network interfaces for transmitting a first data unit (abstract; col. 3, lines 17-45; figure 1);

storing the first data unit in a queue of the at least one queue associated with the identified network interface (figure 2: route table);

retrieving, for the identified network interface, the first data unit from the queue associated with the identified network interface (col. 6, lines 45-56);

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determining one of the one or more network interfaces from which the first data unit is to be transmitted (figure 1; col. 5, lines 15-29); and

forwarding the data unit to the determined network interface for transmission when the determined network interface is the identified network interface (figure 1; col. 5, lines 15-29).

Regarding claim 2, although Sugai does not explicitly teach the method of claim 1 wherein the communications network is an ad hoc network, one of ordinary skill in art would have recognized that this feature is well known in the art (see background of Applicant's specification).

Regarding claim 3, Sugai teaches the method of claim 1 further comprising: determining, prior to storing the first data unit, whether the first data unit is a multicast data unit (col. 5, line 15-29).

Regarding claim 4, Sugai teaches the method of claim 3 further comprising: determining, when the first data unit is not a multicast data unit (col. 5, line 15-29), a priority for the first data unit (col. 2, lines 53-59); and storing the first data unit in a sub-queue within the queue associated with the identified network interface based on the determined priority (col. 7, lines 6-25).

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Regarding claim 5, Sugai teaches the method of claim 3 further comprising: determining, when the first data unit is a multicast data unit, a priority for the first data unit (col. 5, lines 15-29); and storing the first data unit in a sub-queue within a queue of the at least one queue associated with each of the one or more network interfaces based on the determined priority (col. 7, lines 6-25).

Regarding claim 6, Sugai teaches the method of claim 3 further comprising: determining, when the first data unit is a multicast data unit, a priority for the first data unit (col. 5, lines 15-29); and storing the first data unit in a sub-queue within a queue of the at least one queue associated with at least one of the one or more network interfaces based on the determined priority (col. 7, lines 6-25).

Regarding claim 7, Sugai teaches the method of claim 3 wherein, when the first data unit is a multicast data unit, the determining one of the one or more network interfaces includes: identifying a next node to receive the first data unit from a list of next nodes, and determining the one of the one or more network interfaces based on the identified next node (col. 5, lines 15-25 and col. 7, lines 6-25).

Regarding claim 8, Sugai teaches the method of claim 7 further comprising: storing, prior to the forwarding, a copy of the first data unit in the queue associated with the identified network

interface when the determined network interface is the identified network interface, and recording a current position in the list of next nodes (figures 10 and 12).

Regarding claim 9, Sugai teaches the method of claim 7 further comprising: dropping the first data unit when no next node is identified from the list of next nodes (col. 2, lines 53-59).

Regarding claim 10, Sugai the method of claim 1 further comprising: assigning a sequence number to the first data unit, and wherein the storing the first data unit includes: storing the sequence number with the first data unit in the queue associated with the identified network interface (figure 3).

Regarding claim 11, Sugai teaches the method of claim 10 further comprising: storing the first data unit in a queue of the at least one queue associated with the determined network interface when the determined network interface is different from the identified network interface (figure 6).

Regarding claim 12, Sugai teaches the method of claim 11 wherein the storing the first data unit in the queue associated with the determined transmission interface includes: storing the

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first data unit in the queue associated with the determined transmission interface based on the sequence number assigned to the first data unit (figure 8).

Regarding claim 13, Sugai teaches the method of claim 10 further comprising: discarding the first data unit when the determined network interface is different from the identified network interface (figure 5A).

Claims 14-24 are similar to claims 1, 3, 4, 5, 7, 8, 13, 10, 11, 12 and 6, respectively, therefore are rejected under the same rationale.

Regarding claim 25, Sugai teaches a system for transmitting data units from a node in a communications network, the node including one or more network interfaces, each of the one or more network interfaces being associated with at least one queue, the system comprising:

means for identifying one of the one or more network interfaces for transmitting a data unit (figures 11-13);

means for storing the data unit in a queue of the at least one queue associated with the identified network interface (figure 1);

means for retrieving, for the identified network interface, the data unit from the queue associated with the identified network interface (figure 3);

means for separately determining one of the one or more network interfaces from which the data unit is to be transmitted (figure 9); and

means for sending the data unit to the determined network interface for transmission when the determined network interface corresponds to the identified network interface (abstract).

Claims 26 and 27 are similar to claims 14 and 24, therefore are rejected under the same rationale.

Regarding claim 28, Sugai teaches a method for transmitting data units from a node that includes one or more network interfaces, comprising:

identifying a first one of the one or more network interfaces from which to transmit a data unit when the data unit is received by the node or generated by the node (figure 1);

determining a second one of the one or more network interfaces to transmit the data unit when the data unit is ready to be transmitted by the node (figure 1); and

transmitting the data unit via the second network interface when the second network interface is the same as the first network interface (abstract).

Regarding claim 29, Sugai teaches the method of claim 28 further comprising: storing the data unit in a queue associated with the first network interface (figure 2); and storing the data unit in a queue associated with the second network interface when the second network interface is different from the first network interface (figure 2).

Regarding claim 30, Sugai teaches the method of claim 28 further comprising:
determining whether the data unit is a multicast data unit; and storing, when the data unit is a multicast data unit, the data unit in a queue associated with each of the one or more network interfaces (col. 5, line 15-29).

Regarding claim 31, Sugai teaches the method of claim 28 wherein the data unit is a multicast data unit, and wherein the method further comprises: storing, for each neighboring node, information indicating whether the multicast data unit has been transmitted to that neighboring node (col. 7, lines 6-25).

Claims 32-35 are similar to claims 28-31, therefore are rejected under the same rationale.

Regarding claim 36, although Sugai does not explicitly teach the network device of claim 32 wherein the one or more network interfaces is configured to transmit the data units via a wireless link, it would be obvious to one of ordinary skill in the art at the time the invention was made to employ a wireless link in order to make the network more portable, therefore making the network more efficient.

Claim 37 is similar to claim 31, therefore is rejected under the same rationale.

Claim 38 is similar to claim 32, therefore is rejected under the same rationale.

Regarding claim 39, Sugai-Momirov teaches a method for storing data units in a node that includes a plurality of queues, each queue in the plurality of queues being associated with a priority and one or more buffers, the method comprising:

determining whether a data unit is locally generated, the data unit being associated with a priority (Sugai - figure 9);

determining, when the data unit has been locally generated, whether a number of buffers in use for data units of equal or higher priority exceeds a threshold (Momirov – figures 8 and 9);

dropping the data unit when the number of buffers in use exceeds the threshold (Momirov – figures 8 and 9);

determining, when the data unit is not locally generated or the number of buffers in use does not exceed the threshold, if a free buffer exists (Momirov – figures 8 and 9);

storing, when a free buffer exists, the packet in the free buffer (Sugai figure 1);

selecting a non-empty, lower priority queue when no free buffer exists (Momirov figures 3A-3C);

emptying a buffer from the selected lower priority queue (Momirov figures 3A-3C); and

storing the data unit in the emptied buffer (Momirov: figures 3A-3C).

Regarding claim 40, Momirov teaches the method of claim 39 wherein the threshold is configurable (figure 3).

Regarding claim 41, Momirov teaches the method of claim 39 further comprising:
dropping the packet when a non-empty (figures 8 and 9), lower priority queue cannot be selected
(abstract).

Regarding claim 42, Momirov teaches the method of claim 39 wherein the buffer from
the selected lower priority queue includes a buffer at one of a head or tail of the selected lower
priority queue (figure 3).

Regarding claim 43, Momirov teaches the method of claim 39 wherein the buffer from
the selected lower priority queue includes a random buffer in the selected lower priority queue
(figure 3).

Regarding claim 44, Sugai teaches a method for processing a multicast data unit in a node
that includes one or more network interfaces, each of the one or more network interfaces being
associated with at least one queue, comprising:

storing the multicast data unit in a memory (figure 1);

storing a virtual placeholder in a queue of the at least one queue associated with at least
one of the one or more network interfaces (figure 2: route table);

identifying, when one of the virtual placeholders reaches a head of one of the at least one queue, neighboring nodes to receive the multicast data unit (col. 5, line 15-29);

identifying, for each identified neighboring node, one network interface of the one or more network interfaces (figure 8); and

placing a copy of the multicast data unit at a head of a queue of the at least one queue associated with each of the identified one network interfaces (figure 9).

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Conclusion

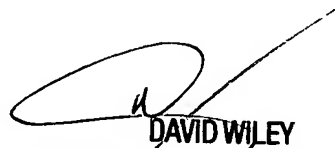
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alina N. Boutah whose telephone number is 571-272-3908. The examiner can normally be reached on Monday-Friday (9:00 am - 5:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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